## Bonneville Power Administration
## Fish and Wildlife Program FY99 Proposal

## Section 1. General administrative information

# Enhance And Protect Fisheries In The Wolf Creek Watershed

**Bonneville project number, if an ongoing project** 9015

**Business name of agency, institution or organization requesting funding**
Wolf Creek Reclamation District (WCRD)

**Business acronym (if appropriate)** WCRD

**Proposal contact person or principal investigator:**


**Name** Jeremy Titcomb, Chairman
**Mailing Address** 41 - B Wandling Road
**City, ST Zip** Winthrop, WA 98862
**Phone** 509-996-3302
**Fax** 509-996-2238
**Email address**


**Subcontractors.**

| Organization | Mailing Address | City, ST Zip | Contact Name |
|---|---|---|---|
| Not Selected | | | |
| | | | |
| | | | |
| | | | |

**NPPC Program Measure Number(s) which this project addresses.**
Cooperative habitat improvement with private landowners; Provide passage and protective screens on tributaties; Bull Trout mitigation; Implement resident fish policies; Help needed with assigning “measure” numbers. Thank you.`

**NMFS Biological Opinion Number(s) which this project addresses.**

This project relates to the Endangered Species Act requirements prohibiting the taking of listed species. In this case, potential taking involves the Upper Columbia Steelhead Trout and Bull Trout.

**Other planning document references.**

USDA - Okanogan National Forest, Middle Methow River Basin Watershed Assessment, March 1997

**Subbasin.**

Methow River - Wolf and Patterson Lake Creeks

**Short description.**

Reconstruct diversion structure to provide for fish passage, fish screen, and measuring devices; line/rebuild 5,100 lineal feet of distribution system piping to eliminate transmission loss; relocate diversion on Wolf Creek to prevent stream dewatering.

## Section 2. Key words

| Mark | Programmatic Categories | Mark | Activities | Mark | Project Types |
|---|---|---|---|---|---|
| X | Anadromous fish | X | Construction | | Watershed |
| * | Resident fish | | O & M | | Biodiversity/genetics |
| * | Wildlife | | Production | | Population dynamics |
| | Oceans/estuaries | | Research | | Ecosystems |
| | Climate | | Monitoring/eval. | X | Flow/survival |
| | Other | | Resource mgmt | | Fish disease |
| | | | Planning/admin. | | Supplementation |
| | | | Enforcement | * | Wildlife habitat en- |
| | | | Acquisitions | | hancement/restoration |

**Other keywords**.
Endangered species act, conservation, partnership, coordination, bull trout, steelhead, watershed analysis, watershed planning, aquatic conservation strategies, incidental take, dewatering, irrigation

## Section 3. Relationships to other Bonneville projects

| Project # | Project title/description | Nature of relationship |
|---|---|---|
| | None | |
| | | |
| | | |
| | | |
| | | |

## Section 4. Objectives, tasks and schedules

### *Objectives and tasks*

| Obj 1,2,3 | Objective | Task a,b,c | Task |
|---|---|---|---|
| 1 | Achieve compliance with requirements of ESA / Increase fish habitat | a | Reconstruct irrigation diversion on Wolf Creek to allow upstream fish passage |
| | | b | Reconstruct WCRD ditch headworks to include fish screen |
| 2 | Decrease consumptive use of surface water | a | Line appoximately 3,800 feet lineal feet of unlined leaking ditches |
| | | b | Encourage WCRD member to improve on-farm irrigation practices and upgrade facilities. |
| | | c | Relocate privately owned diversion structure on Wolf Creek |
| 3 | Decrease threat to water quality | a | Replace 1,300 lineal feet of existing undersized pipe with larger capacity pipe to eliminate overflow potential |
| | | b | Line approximately 2,500 feet of unlined ditching to decrease potential for slope failure |

### *Objective schedules and costs*

| Objective # | Start Date mm/yyyy | End Date mm/yyyy | Cost % |
|---|---|---|---|
| 1 | 1/1999 | 9/1999 | 80.00% |
| 2 | 1/1999 | 9/1999 | 15.00% |
| 3 | 1/1999 | 12/1999 | 5.00% |
| | | | |
| | | | TOTAL 100.00% |

**Schedule constraints.**
All tasks, except those associated with Object 2, Task C, can be completed in 1999. This Task will be implemented after changes to the related water rights have been authorized by Washington Dept. of Ecology. Other potential delays relate to permitting.

**Completion date.**
2000

## Section 5. Budget

### *FY99 budget by line item*

| Item | Note | FY99 |
|---|---|---|
| Personnel | Temporary Employee for WCRD | $20,000 |
| Fringe benefits | 10% | $2,000 |
| Supplies, materials, non-expendable property | Fish Screen, Piping, Monitoring Equip., Access Road Dam Improvements. Cost includes installation. | $360,000 |
| Operations & maintenance | None | |
| Capital acquisitions or improvements (e.g. land, buildings, major equip.) | None | |
| PIT tags | # of tags: None | |
| Travel | | $ 250 |
| Indirect costs | | $ 500 |
| Subcontracts | Engineering, Permitting, Environmental Compliance, Agency Coordination | $75,000 |
| Other | Contigencies (20%) | $91,550 |
| **TOTAL** | | $549,300 |

### *Outyear costs*

| Outyear costs | FY2000 | FY01 | FY02 | FY03 |
|---|---|---|---|---|
| Total budget | $549,300 | | | |
| O&M as % of total | 0.00% | | | |

## Section 6. Abstract

WCRD's present diversion structure onWolf Creek has the potential for "taking" of Upper Columbia Summer Run Steelhead and Bull Trout. The structure, built in 1992 and authorized by special use permit from the USDA - Forest Service, is now under review by that agency. An incidenatla taking permit from the USFSW and NMFS is being sought.

Special problems identified include:

- WCRD's diversion structure does not allow fish passage nor is th ditch headworks screened.
- Leakage from unlined system and on-farm ditches result in the diversion ofa additioan quantities of water from the Wolf Creek thereby lessening stream flow.
- Overflows from undersized ditching and ditch bank failure have and will continue to increase erosion and sedimenation potential to survace waters and fish habitat within the affected watersheds, including the Methow River.

- A private diversion in the lower reaches of Wolf Creek dewaters that section of stream compromises access to Spring Chinook, Summer Run Steelhead, and Bull Trout.

The proposed project provides outcomes benefiting the fisheries as well as WCRD. Thser benefits include:

- Elimination of potential for fish to enter WCRD distribution system.
- Assuring approximately 8 miles of upper Wolf Creek habitat will be available for fish use
- Water savings of at least 1000 acre feet per year throught ditch lining and increased on-farm efficidencies.
- Opportunities to eliminate dewaterring of one or more reaches of Wolf Creek.

At project completion, it will be possible to monitor irrigation water use througout the entire sytem more accurately.

## Section 7. Project description

### a. Technical and/or scientific background.

Two major irrigators divert water from the Wolf Creek catchment, a major tributary to Washington State's Methow River. These are the Wolf Creek Reclamation District (WCRD), a public irrigation district, and Haub Brothers Enterprises Trust (HBET), the owner of the Sunny M Ranch. The former supplies water to some 800 acres of farmland. The latter is a major user of WCRD water but irrigates an additional 200 acres from Wolf Creek. These users currently divert over 4,000 acre feet of water each year.
WCRD's water right allows diversion from the mainstem of the upper reach of Wolf Creek and Little Wolf Creek on a year around basis. Diverted water is channeled to Patterson Lake, a storage reservoir, for use during the irrigation season. Distribution from the reservoir to farms is through a combination of open and lined ditching.

HBET's Wolf Creek source requires water to be diverted from the lower reach of Wolf Creek to the field by means of a crude dam extending into the stream channel and an unlined ditch nearly one mile in length. It must then be pumped through the field distribution system (center pivot and handlines). Since this ditch is unlined, much water is lost before it reaches the fields. In fact, the Wolf Creek adjudication allowed an inordinately high water duty (16 cfs) between May 1 and July 1 to accommodate losses from this ditch.

Even with recent system upgrades made by both parties, unlined distribution ditches, direct stream diversions, impaired fish passages, on-farm inefficiencies, and unreliable water supply during drought years characterize water use from the Wolf Creek catchment. Specific problems are:

- Unlined ditches serving both parties result in the diversion of significant quantities of water from the Wolf Creek drainage to compensate for transmission losses, thereby further lessening streamflow.
- The WCRD diversion structure does not allow fish passage nor is it screened.
- Undersized ditching and unstable ditch banks have resulted in overflows and failures which, in turn, have caused erosion and sedimentation.
- Depletion of the lower reach of Wolf Creek resulting from the HBET diversion impairs fish passage and decreases habitat effectiveness. Of particular concern are anadromous fish species that utilize these areas for spawning, incubation, and rearing.
- Inefficient on-farm systems result in further wasting of water.

Funding of this application will provide and opportunity for fisheries' agencies charged with administering the ESA and other fish enhancement efforts to support:

- public private efforts;
- lessen impacts on traditional economies faced with ever increasing demands upon financial resources to protect fish and wildlife.
- meet goals contained in the 1994 Columbia Basin Fish and Wildlife Plan.

The figure attached depicts the location of the various elements described in this application.

**b. Proposal objectives**.

The proposed project provides the following opportunities to affirmatively address the problems cited above. These include:

1. Water savings of approximately 1000 to 1600 acre feet annually to be achieved through ditch lining and increased on-farm efficiencies;
2. Maintaining and improving access to resident and migratory species of fish to approximately 8 miles of quality habitat above the existing Wolf Creek diversion structure;
3. Relocating to the WCRD diversion a private diversion in the lower reaches of Wolf Creek which may, by adjudicated water right, divert up to 16 cfs of water for irrigation purposes.
4. Other benefits include providing more reliable irrigation water supply, and maintaining the level of Patterson Lake, a quality recreation area featuring swimming, boating, and sports fishing.

*Water Savings*

It is estimated that eliminating of the present HBET owned conveyance ditching from Wolf Creek to the center pivot and from the WCRD dam to the center pivot will result in an annual water savings of up to 500 to 800 acre feet. An additional 500 to 800 acre feet

per year will be saved by WCRD by lining approximately 2,500 feet of an extremely "leaky" portion of open ditching. Additional water savings will be sought through water conservation programs for district members.

*Fish Enhancement*

The proposal will result in direct benefits to the Wolf Creek fishery through the relocation of the HBET diversion to the WCRD diversion structure, reconstruction of the WCRD diversion in Wolf Creek to include a fish screen and passage, and increased conveyance efficiencies through elimination of much of the present unlined ditch systems. Instream flows should be greater and fish protection and passage enhanced. The inordinately high diversion rate of 16 cfs during spring and early summer months will no longer be needed by HBET from lower Wolf Creek. Presumably, the chief benefit of this would be a greater potential to allow passage of migrating adult and juvenile anadromous fish, increased spawning habitat, and increased rearing habitat.

Specific tasked are as follows. Please refer to graphic in previous section for clarification.

| Graphic No. | Task | Benefit |
|---|---|---|
| 1 | Reconstruct existing WCRD diversion structure and ditch headworks. | • Improved fish passage to upper reaches of Wolf Creek (at least 8 miles of useable habitat).<br>• Screening will prevent fish loss to WCRD distribution system.<br>• Increased reliability of irrigation water supply.<br>• less need for continued in-channel maintenance with equipment |
| 2 | Replace 1,300 lineal feet of existing 36-inch CMP that conveys water from the WCRD headgate to Patterson Lake with a new 42-inch CMP. | • Prevention of possible sedimentation and erosion from overflow. |
| 3 | Install 1,200 feet of new 21" PVC enclosed piping in WCRD distribution system and line 1,300 feet of open WCRD distribution ditch with 36-inch CMP | • Prevention of erosion and sedimentation from bank failure on existing ditch. Estimated savings 500 to 800 acre feet per year |
| 4 | Relocation of HBET Wolf Creek diversion structure to WCRD diversion. | • Elimination of potential for dewatering this reach of Wolf Creek during low flow years.<br>• Creation of more useable habitat for migration, spawning, and rearing. |

| Graphic No. | Task | Benefit |
|---|---|---|
| 5 | Enclosing 1,200 feet of HBET irrigation ditching. | • Elimination of transmission loss associated with existing open ditch. Estimated savings 300 to 500 acre feet per year |
| 6 | Abandon 5,200 feet of HBET irrigation ditching. | • Elimination of transmission loss associated with existing open ditch. Estimated savings 200 to 300 acre feet per year |

**c. Rationale and significance to Regional Programs**.

Wolf Creek provides important refugia habitat for summer steelhead and bull trout. It also provides spawning and rearing habitat for spring chinook salmon in its lower reaches. As a tributary to the Methow River, Water in Wolf Creek can affect habitat there.

Wolf Creek is in excellent conditon and is ecologically intact with the exception of the effects of irrigation. Repairing the WCRD facilities by screening, piping, and improving passage will reduce direct loss of steelhead/rainbow trout, bull trout, and west slope cutthroat trout.

The project's outcome is not inconsistent with the FWP's overall goals for improving anadromous fish stocks. This project is also consistent with the findings of the Independent Scientific Group in ther review of the NPPC Fish and Wildlife Program and the Okanogan National Forest Land and Resource Manangement Plan as amended by the Northwest Forest Plan (USDA, 1994).

While the magnitude of this project is small compared to the immense scope of efforts to restore anadromous fisheries in the Columbia Basin, it must be remembered that tributary streams to the Columbia River such as the Methow River provide the essential habitat for fish populations. Current irrigation practices in these same drainages can best be classed as primitive. The Methow watershed contains many ditch companies and other private parties utilizing surface water. Most diverters have poorly diversion structures and utilized inefficient on-farm water use practices. In comparison to other smaller systems, the proposed project appears to offer a high benefit in creating additional habitat, protecting existing populations, and water savings.

This project is being undertaken for the benefit of both irrigators and the regional fisheries resource. Without financial participation from other sources, such improvements would not be cost effective. The cost per acre for this project would be nearly $700 per acre. Finally, the sudden and unexpected listing of the Upper Columbia River Steelhead has not allowed WCRD time to raise funds internally to meet ESA

requirments for protection of this species. Thus the livelihood of member farmers is threatened.

The Methow basis is one which has had considerable attention by federal, state, and tribal fishery agencies. Numerous studies have been done as has watershed planning. It is now time to implement fish protection and enhancement measures heretofore identified. The project proposed by the Wolf Creek Reclamation District is not only responsive to the needs of the District members but also one which has a very tangible benefit to the Methow fishery.

**d. Project history**

This project was evaluated by the National Association of Conservation Districts as a candidate for participation in the National Irrigation Initiative Program. While not selected for funding, the project received considered in the final round of evaluation.

**e. Methods**.

The relationship between this project and HBET participation must be explained. While it is hope that efforts that both WCRD and HBET effort can occur concurrently, the current regulatory morass in the state of Washington's Department of Ecology will probably not allow timely processing of the necessary changes to the HBET water right. Therefore, removal of the HBET diversion will not occur until water rights are amended. Further, the budget developed in support of this proposal and as shown in Section 5 does not include any costs associated with any improvement made to the HBET properties. These costs, estimated to be in excess of $30,000, will be borne by HBET.

Implementation of the project will involve the following sequential steps.

1. Undertake necessary internal arrangements to authorize project. WCRD to proceed with project including the relating to budget, project administration, and the relationship between HBET and WCRD.
2. Prepare final project design and necessary engineering documentation.
3. Secure needed regulatory approvals .
4. Construction and related administration.
5. Close out project.

The estimated timeline for completion of this effort is twelve months beginning January 1999. Some tasks may run concurrently. Critical path analysis identifies the regulatory approval necessary to obtain the transfer of water right as being the greatest and most significant time constraint.

**f. Facilities and equipment**.

The fish screen will be a 3' X 10' Rotating Drum, Hydraulic Drive, Paddle Wheel Driven Screen capable of operating at a rate of at least 16 cfs. The screen will be fabricated by the Washington State Department of Fish and Wildlife (WDF&W) and maintained by service contract with WDF&W. Other equipment to be used will be conventional excavation and construction equipment.

**g. References**.


USDA - Okanogan National Forest, March 1997, Middle Methow River Watershed Assessment.

Molesworth, Jennifer, USFS Fisheries Biologist, January 1998, Personal Communication re: Wolf Creek Fisheries.

Easterbrooks, John, Washington State Department of Fish & Wildlife, January 1998, Personal Communication re: Fish Screen Specifications and Costs.

RH2 Columbia Engineering, August 1997, Cost Estimates for Dam Reconstruction.


## Section 8. Relationships to other projects

Parts of this project are reference in the recently completed Middle Methow River Watershed Assessment prepared by the USDA Forest Service. The Assessment identifies WCRD's Wolf Creek diversion structure as a potential barrier to fish passage and, having no screen, a liability to reproducing and juvenile fish populations. Stated objectives are to "control erosion, screen ditch to stop fish passage, and make diversion passable to upstream fish migration." Recommendations include:

- Require ditch company (WCRD) to control amount of water coming into ditch to avoid overflow banks and flow down roadways.
- Require screen installation.
- Modify diversion structure to assure fish passage.
- Require operating plan from permit holder that specifies time table for inspection, maintenance, and replacement of ditch structure.

The project is consistent with the objectives of the following planning documents:

- The draft Methow River Basin Water Management Plan developed by the Methow Valley Water Pilot Planning Committee. This Plan presumes there is no additional surface water available for out-of-stream uses. The plan also emphasis conservation and efficient water use. Retro fitting of existing irrigation systems is envisioned as a way to enhance fisheries as well as provide water for new growth.
- United States Forest Service Aquatic Conservation Strategy Objectives contained in the Record of Decision for Amendments to the Forest Service and Bureau of Land

Management Planning Documents within the Range of the Northern Spotted Owl. These objectives relate to the maintenance and restoration of aquatic habitats for the benefit of biological diversity and habitat retention.

Finally, the proposed project will compliment three other fish enhancement now being implemented or considered to improve Methow River fisheries. These are listed in the following table.

| Project | Sponsor |
|---|---|
| Wenatchee & Methow River Coho Restoration Project | Yakima Indian Nation |
| Methow Valley Irrigation District Conversion | Washington Department of Ecology |
| Methow Basin Side Channel Habitat Construction | Yakima Indian Nation |

## Section 9. Key personnel

Oversight of the proposed project will be by Mr. Jeremy Titcomb, current Secretary of the Wolf Creek Reclamation District. Mr. Titcomb, a trained engineer, has served WCRD for more than 20 years. He has been project manager on several WCRD projects including a major replacement of a major section of open ditch which had failed with a new metal pipeline.

Titcomb's duties and responsibilities will be executed on behalf of WCRD and will include:

1. Administration BPA Grant.
2. Budget oversight.
3. Participate with consulting engineers, agency representatives, contractors, and others in developing final project design and permitting.
4. Arrange for and administer contracts with subconsultants during construction.
5. Liaison with WCRD Board of Directors and its members.

Mr. Titcomb will be supported by qualified agency representatives having expertise in fishery management.

## Section 10. Information/technology transfer

WCRD will coordinate design and implementation of the project with agencies. New concepts that tend to enhance fisheries will be incorporated into project design to the extent practical.